

Appl. No: 09/890,596  
Amdt. dated Dec. 10, 2007  
Reply to Office Action of July 10, 2007

REMARKS

In view of both the amendments presented above and the following discussion, the Applicants submit that none of the claims now pending in the application is anticipated under the provisions of 35 USC § 102. Furthermore, the Applicant(s) also submits that all of these claims now satisfy the requirements of 35 USC § 112. Thus, the Applicants believe that all of these claims are now in allowable form.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, the Examiner should telephone Mr. Peter L. Michaelson, Esq. at (732) 542-7800 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Drawings

Although the Examiner has not yet approved the proposed drawing corrections set forth in the Applicants' prior amendment mailed May 16, 2007, nevertheless, to expedite prosecution, the Applicants have enclosed a substitute drawing sheet which incorporates those corrections.

Status of claims

To simplify amending the claims and hence expedite their examination, the Applicants, rather than re-writing independent claim 5, to show multiple individual amendments,

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have simply canceled that claim and replaced it with new independent claim 9. The latter claim more precisely defines the present invention than did the former claim.

Minor amendments have been made to each of claims 6-8.

Rejections

A. Rejection under 35 USC § 112

The Examiner rejected claim 6 under the provisions of 35 USC § 112 as being indefinite. Specifically, the Examiner stated that the limitation "his own corresponding one" lack proper antecedent basis.

In response, the Applicants have now amended this claim to recite "a different associated one of the personal assistants". The recitation "associated one of the personal assistants" finds antecedent basis in independent claim 9, from which claim 6 depends.

Accordingly, the Applicants submit that claim 6, as is now stands, is sufficiently definite under the provisions of 35 USC § 112. Hence, this rejection should now be withdrawn.

B. Rejection under 35 USC § 102

The Examiner has again rejected claims 5-8, even with the Applicants' prior amendments to claim 5, under the provisions of 35 USC § 102(b), as being anticipated by the

teachings of the '731 Koreeda patent (United States patent 5,781,731 issued to H. Koreeda et al on July 14, 1998). Inasmuch as claim 5 is now canceled, this rejection is moot. However, since claim 5 has been replaced by new independent claim 9 -- which is the sole independent claim in the application, then, to facilitate prosecution, this rejection will principally be discussed in the context of this new claim.

The Examiner maintains that the limitations in claim 5, as it stood prior to this amendment, are identically disclosed by the teachings of the '731 Koreeda patent.

Specifically, the Examiner notes that this patent, which describes a methodology for setting up conferences among a plurality of users, teaches the concept of a user, through his own conference sponsor agent, communicating with the conference management agent for any other user who is invited to a conference in order to determine a conference schedule. With this in mind, the Examiner then interprets the user agent which is setting up the conference to be the coordinating subsystem, as recited in claim 5, "where the agents of other users invited to the conference send the information to the sponsor of the conference to check for conflicts between schedules, i.e. the agents of the plurality of users communicate using the coordinating subsystem." The Applicants have now canceled this claim and substituted new claim 9 which more precisely defines their present invention, over that recited in claim 5, thus serving to further distinguish their presently claimed invention from the teachings of the '731 Koreeda patent.

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Given those amendments, this rejection is now respectfully traversed.

As the Examiner will soon appreciate, through the rigid communications hierarchy inherent in the present invention, the coordinating subsystem is a separate sub-system to which the Applicants' personal service agents communicate. Those agents associated with different users do not communicate with each other to accomplish any sub-task for any one user but rather communicate, apart from with their associated personal assistants, only with the coordinating subsystem. By strictly limiting communication to occur only between certain sub-systems in and along the Applicants' defined hierarchy in order to accomplish user tasks and sub-tasks, flow of confidential user information is significantly limited, hence providing increased security over that information.

The Applicants will now address their present inventive system, then discuss pertinent aspects of the system taught by the '731 Koreeda patent, and delineate distinguishing features of their present invention, as recited in claim 9.

In particular and as discussed in the Applicants' prior amendment mailed May 16, 2007, the present inventive personal agent sub-system is formed of three basic sub-systems: a personal assistant sub-system, at least one service agent sub-system, and a coordinating sub-system. The personal assistant sub-system communicates with both the users and with all the service agent sub-systems; all the

service agent sub-systems communicate with both the personal assistant sub-system and the coordinating sub-system.

Specifically, within the personal assistant sub-system, a personal assistant is associated with each different user. A 1:1 correspondence exists between each user and his(her) personal assistant; each user only communicates with his(her) personal assistant and no other such assistant. Each personal assistant interacts with those personal service agents solely associated with that particular assistant, and with no other personal service agents. The user does not directly communicate with any of his(her) personal service agents.

For any one user, the personal service agents associated with that user perform specific specialized sub-tasks only for and communicate with that user's particular personal assistant. To accomplish any such task for any one user, the personal assistant associated with that user does not communicate with the personal assistant associated with any other user. Similarly, to accomplish any sub-task for a given user, the personal service agent associated with that sub-task and that user does not communicate with any of the personal service agents associated with any other user. Each personal assistant and personal service agent only operate for its associated user, i.e. on a 1:1 basis, and for no other; though multiple personal service agents may operate, to accomplish multiple sub-tasks, for any one personal assistant and there through ultimately for its one associated user.

Each personal service agent also communicates, aside from with its associated personal assistant, with a coordination processor (also referred in the specification as a "processor part") within a coordinating (processing) sub-system. Personal service agents do not directly communicate with each other. They communicate with and their actions are coordinated by the coordination processor.

For example, as shown in FIG. 1 of the present application, the inventive personal agent system may illustratively contain four different personal assistants 11-14. Each of these assistants is only associated with a different corresponding individual user; hence, each personal assistant serves a different user, but only that user. Each user can access his(her) corresponding assistant through PC 60 (or any of PCs 60' used in a networked environment shown in FIG. 2). As shown, each of these personal assistants interacts with one or two associated personal service agents within environments 30 and 40. In particular, personal assistants 11 and 12 interact with personal service agents 31 and 21, and 22 and 32, respectively; personal assistant 13 interacts just with personal service agent 23 in environment 20, and personal assistant 14 interacts just with personal service agent 34 in environment 30. Each of personal service agents 20, illustratively agents 21-23, may be a personal secretary agent which provides a secretarial function for its associated user; while each of agents 30, such as agents 31-32 and 34, may be a traveling agent which makes travel arrangements for its associated user. Each personal assistant passes on orders from its associated individual user, but no one else, to its associated personal service

agent(s) based on the needs of that user and instructs that personal service agent to undertake a corresponding sub-task, i.e., perform a given secretarial task, or arrange a meeting with another user. Because each personal assistant and each personal service agent, by virtue of the fixed and strict social hierarchy there between, do not handle tasks for multiple users, confidential information for one user is not likely to be exchanged with any other user, thus restricting user information flow within the entire personal agent system. This, in turn, significantly heightens security over that provided by traditional agent-based systems. Specifically, each personal assistant and its associated personal service agent(s) do not communicate with any other such assistant or agent (aside from, in an modified embodiment of the invention, sharing learning information or specific user-approved information -- but doing so is not part of directly accomplishing any user task or sub-task), but only through a neutral process (coordinating sub-system), such as processing part (coordination processor) 41, which coordinates the actions of all the personal service agents for tasks that ultimately involve multiple users. The coordination processor is the only element that receives and processes the confidential information provided by multiple personal service agents to handle a task, which here is to, e.g., establish an appointment involving multiple users.

Inasmuch as the present invention significantly reduces, if not substantially eliminates, inter-agent communication, over that which would occur in traditional agent-based systems, network traffic is significantly

reduced, programming of each such agent is simplified, and the security of confidential user information is enhanced.

In contrast, the '731 Koreeda patent does not teach limiting communication in an agent-based system along a fixed hierarchical manner as the Applicants teach and claim but rather explicitly teaches and exploits use of unrestricted inter-agent communication, thus teaching directly away from the present invention.

In particular and also as discussed in the Applicants' prior amendment mailed May 16, 2007, the '731 Koreeda patent is directed to a computerized agent-based system for scheduling conferences among various users. As discussed in col. 4, line 14 et seq and col. 8, line 1 et seq -- the latter with reference to FIG. 3 of that patent, the system envisions a plurality of personal agents 800<sub>a</sub>, 800<sub>b</sub>, 800<sub>c</sub>, . . . . Each of the these agents contains a user interface agent (e.g., user interface agent 820<sub>a</sub> for personal agent 800<sub>a</sub>), a conference sponsor agent (e.g., conference sponsor agent 830<sub>a</sub> for agent 800<sub>a</sub>), a schedule management agent (e.g., schedule management agent 840<sub>a</sub> for agent 800<sub>a</sub>) and an appointment agent (e.g., appointment agent 850<sub>a</sub> for agent 800<sub>a</sub>).

In operation and as depicted in FIG. 3 and expressly described in col. 8, line 22 et seq, each of the schedule management agents 840<sub>a</sub>, 840<sub>b</sub>, . . . receives a conference scheduling notice message from each of the conference sponsor agents 830<sub>a</sub>, 830<sub>b</sub>, . . . , an appointment request message from each of the appointment agents 850<sub>a</sub>, 850<sub>b</sub>, . . . , and schedule information concerning days off,

utilization of flextime, personal affairs and the like, the schedule information being input by each of the users 810<sub>a</sub>, 810<sub>b</sub>, ... by itself through each of the user interface agents 820<sub>a</sub>, 820<sub>b</sub>, ... .

As expressly shown by the inter-agent communication depicted in FIG. 3, agents associated with different users can directly communicate with each other -- a fact which the Examiner seems to expressly recognize. For example, a conference sponsor agent (830<sub>b</sub>) and an appointment agent (850<sub>b</sub>) for one personal agent (800<sub>b</sub>) can communicate directly with a schedule management agent (840<sub>a</sub>) of another personal agent (800<sub>a</sub>), and vice versa for the former agent where its schedule agent (840<sub>b</sub>) can communicate with the conference sponsor agent (830<sub>a</sub>) and the appointment agent (850<sub>a</sub>) of the latter agent. What this means is simple. There is no apparent restraint on inter-agent communication and hence on the extent to which confidential user information can be exchanged amongst various agents. This is not surprising given that the '731 Koreeda et al patent is totally oblivious to the fact that certain user information, e.g. schedule information, which its agents might access is confidential to a given user, and to maintain its confidentiality should not be exchanged with agents for other users without express permission of its owner. Given that the patent is completely indifferent to this problem, it should come as no surprise that the patent poses no solution to this problem.

The problem of controlling the flow of unrestrained user information in a multi-agent system, as inherent in the art here typified by the teachings of the

'731 Koreeda et al patent, is the exact problem which the Applicants recognize and solve. As discussed above, the Applicants' inventive solution is to employ a fixed social hierarchy for communication flow in a multi-agent system, with communication between different users only occurring ultimately through a coordination processor, in order to accomplish user tasks and sub-tasks, with no such flow of information occurring between the agents for different users.

By virtue of expressly allowing inter-agent communication, the '731 Koreeda patent teaches directly away from the present invention -- so much so that, when one of ordinary skill in the art were to be faced with the problem addressed by the Applicants, that person would simply not be motivated in a direction that would contemplate the invention. There are simply no suggestions, whether express or implied, in that patent which would lead such a person towards the present invention.

The Applicants' social hierarchy with its restricted communication flow -- which is simply not taught by the '731 Koreeda patent -- is clearly recited, along with other distinguishing features, in new independent claim 9. In particular, this claim recites as follows, with those recitations being shown in a bolded typeface:

"A hierarchically-structured personal agent system within a computer system, the personal agent system comprising:

a personal assistant sub-system having a plurality of personal assistants, each one of said personal assistants being arranged to perform tasks for only one different user in a plurality of users;

at least one service agent sub-system comprising a plurality of personal service agents, **each one of said personal service agents being arranged for carrying out a specific sub-task for an associated one of said personal assistants and for only the associated one of said users who is served by said associated one personal assistant; and**

**a separate coordinating sub-system, apart from the personal assistant sub-system and the service agent sub-system, comprising at least one coordination processor for mutual coordination of actions of said personal service agents for different ones of the users; and**

**wherein, in order to restrict flow of user information within the personal agent system, said one user only communicates with said one of the personal assistants, said one personal assistant communicates, apart from with said one user, only with said one personal service agent associated with said one user and within each of said service agent sub-systems in order to accomplish one of said tasks, and said one personal service agent communicates, apart from with the associated one of the personal assistants, with the coordinating sub-system but not with any personal service agent associated with any user other than said one user in order to accomplish said sub-task for said one user.**" [emphasis supplied]

Inasmuch as these distinguishing recitations are not disclosed at all, let alone identically, by the teachings of the '731 Koreeda et al patent, then this claim is not anticipated by those teachings and hence is patentable there over under the provisions of 35 USC § 102.

Each of dependent claims 6-8 directly depends from claim 9 and recites further distinguishing aspects of the present invention. Consequently, each of these dependent claims is also patentable, under the provisions of 35 USC § 102, over the teachings of the '731 Koreeda et al

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patent for the same exact reasons set forth above with respect to claim 9.

This rejection should now be withdrawn.

Conclusion

Thus, the Applicants submit that none of the claims, presently in the application, is anticipated under the provisions of 35 USC § 102. Furthermore, the Applicants also submit that all of these claims now fully satisfy the requirements of 35 USC § 112.

Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

Respectfully submitted,

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